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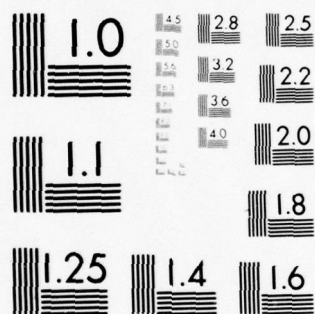
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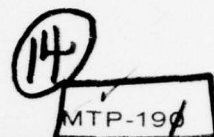
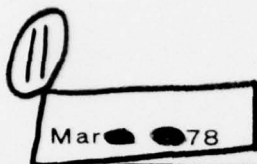
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The Pentagon 'Four-Step'

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Norman/Waks

Chief Management Scientist

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The MITRE Corporation
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ABSTRACT

↘ In the Secretary of Defense's Annual Report for FY'79 to the Congress, released on 2 February 1978, he indicated that the Department of Defense (DOD) was currently testing a new concept for contractor source selection on major programs called the "four-step" process. He further indicated that a decision would be made in February on whether DOD would adopt this process. DOD's encouragement of the publication by the Wall Street Journal of a favorable article on the subject on 6 March would seem to indicate that this decision has been made and that DOD intends to go ahead and adopt the concept as a matter of policy.

This paper questions both the desirability and the necessity for DOD to do so, since the objectives of "four-step" can be accomplished in other ways. And these ways do not risk reducing program results, as "four-step" does. ^

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THE PENTAGON "FOUR-STEP"

The Pentagon is dancing. Although it has one of the best records in Government in the area of controlling cost growth^[1], in spite of being involved in perhaps the most complex management activity in which our Society engages -- acquiring, over lengthy time-spans, the advanced technological material that provides for our national security -- it nevertheless feels driven politically to offer still another method for "discouraging cost over-runs." This is its new procedure for choosing the private organizations who will develop and produce its major military systems, called "four-step source selection." And so, by means of appropriate interviews, the new procedure is announced publicly in a respectable medium like the Wall Street Journal of March 6, 1978 (see Appendix). And its validity is attested to by solemnly calling attention in such interviews to the two-year test that was run on it "involving 66 bids on 17 projects."

Further, perhaps because no claim is being made that the cost of the highly expensive defense programs to which "four-step" is to be applied is going to be reduced by the new procedure^[2] --

[1] The Armed Forces Journal, March 1978, estimates, based on GAO data, that DOD's weapon cost growth averages "less than half of other major federal government acquisitions."

[2] In fact, the Department of Defense's (DOD's) Director of System Acquisition is quoted quite openly as saying "This won't reduce the cost of weapons; in fact, at the outset, the price may seem higher...."

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only the difference between the estimated cost of the programs and their actual cost -- a claimed finding from the tests of seemingly greater significance is made about "four-step" in the public announcement: that it "produce(s) technical proposals that are more thoughtful and imaginative than under the current system." Finally, the claim is made that the new technique will prevent or reduce certain "abuses" of the former approach to source selection called "technical leveling", "technical trans-fusion", "auctioning" (through the use of the "best and final offer" technique), and "buying in" -- all of which will increase the fairness with which the source selection process is conducted. Measuring the degree to which "four-step" would eliminate or reduce these four "abuses" was, in fact, the stated official objective of the test.

Perhaps so. Maybe the test results do substantiate all of these claims. But there is room for doubt about this -- as well as whether a controlled test of any type was actually ever run and whether the right things were tested.

So what? What if the new approach doesn't turn out to be any better than the old? After all, it can always be argued that it doesn't matter that there is a new set of rules in DOD for selecting sources, because, in a competitive environment, businessmen can always do as well under one set of rules as another -- provided, of course, that the rules are known and understandable by all and are consistently applied. And these the DOD always does a good job of assuring. So why be concerned?

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The reason for the concern is that the new approach may be worse than the old, in a vital respect -- a respect that has not even been tested, much less tested successfully. And that is, it may lead to worse program results. And program results are "the name-of-the-game" in systems acquisition, not better proposals.

Admittedly, to obtain data on comparative results in programs that take as much as 15 years to accomplish would take much time. And the so-called "abuses" need to be alleviated now, as well as action taken on the cost-growth front. Failure to do this latter, in fact, could threaten what may already be a too-low defense budget. But neither should be dealt with via "four-step", because it is the contention of this paper that:

- (1) We can predict diminished program results from "four-step", both in performance and costliness, from what we already know -- to the detriment of both the Government and its suppliers.
- (2) Maximizing program results, in terms of getting the right materiel into the hands of fighting forces in time for it to have the greatest first-line operational life, is the primary job of defense acquisition officials; providing for equity in the process of selecting sources to provide such materiel is important, but secondary.

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- (3) While correcting the so-called "abuses" that are taking place in today's source selections is necessary, each can be corrected by a means other than one like "four-step" which risks the accomplishment of the primary job. They can, in fact, be dealt with directly.

Each of these contentions will be discussed in turn. If they are valid, "four-step" should be dropped, the "abuses" addressed directly, and an approach taken to major source selections which recognizes that they are not isolated activities in themselves to which a uniform set of rules can be applied. Rather, they are only steps in a long chain of events through which a specific national security capability is acquired. As such, they each need to be shaped and conducted, like any other part of the design process, to meet the needs of the strategy devised for acquiring the particular system at issue. And this means taking into account in a maximum way such parameters -- to name just a few -- as a program's priorities, a program's uncertainties, and the intended relationship between the Government and the winning contractor(s) after the source selection has been completed. Procurement is not an end in itself, much less its contracting aspects.^[3]

[3] For more on this subject, see Procurement and the Systems Engineer, N. Waks, MITRE MTP-1, May 1965.

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DIMINISHED RESULTS FROM "FOUR-STEP"

The predictably diminished program results in terms of performance and costliness both spring from the same source. And that is the requirement under "four-step", as an admittedly basic difference between it and the former procedure, of strictly limited communication between the buyer (the Government) and the potential sellers (the industrial bidders) during the proceeding, in order to help assure the equitableness of the selection. Yet there should be maximum communication during this period, in order to assure that what the respective bidders are offering will in fact satisfy the Government's needs and preferences. That is, given the many uncertainties that ordinarily exist at this "handover" point in an advanced technological program -- even great uncertainty at times about whether the program can be accomplished in a timely manner at all -- it is absolutely mandatory that not only maximum clarifying discussion of the need and offers take place, which "four-step" still permits to a degree, but, since the offers are really proposed "solutions" to the Government's "problem", both maximum exploration of the validity of each and the relative degree of fit between the two.

Indeed, the weakness in even the current source selection technique, in which unlimited discussion is permitted, is that the Government does not know how to accomplish this vital goal of matching problem and solution well enough at this critical stage of a program so as to avoid later major program difficulties directly attributable to failures of communication at source selection time. And this has led,

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at times, to the most costly programs of all: those which meet their development contracts but which are never produced or deployed because they insufficiently met the military need which the program was initiated to satisfy. Can there be any doubt, therefore, that a source selection procedure for major defense programs which deliberately goes in the direction of reducing the amount and type of discussion that government reviewers of proposals can initiate when they encounter questionable aspects of the offers they receive will cause the cost of DOD's overall defense acquisition program to go up -- and go up not only in dollars but in force readiness?

A good source selection proceeding on a major program, as those who have participated in one are well aware, involves of necessity a good deal of iteration between the potential contracting parties, as both the Government statement of need gets shaped and refined as a result of what is offered, and the Government, in turn, not only comparatively evaluates bidder proposals but attempts to validate them (prevent "competitions of exaggeration" by verifying that what bidders promise can in fact be done and be done in the time and for the cost estimated). As a result, it is quite predictable that if such complete, unrestrained iteration does not take place during the source selection with at least some of the bidders in the competitive range, then it most assuredly will have to take place, in one form or another, at a later date, probably at various Government review points in the program. The fact cannot be avoided that, at some point, there must be a full meeting of the minds about the degree of appropriateness of the approach that is being taken to meeting the need. And until it is, time and dollars will be flowing, much of which could be wasted. Thus,

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it can be argued that even the equity goals which are being used to justify "four-step", cannot in fact be achieved under it. An attempt will always be made eventually to change the winning proposal at least to whatever degree is necessary.

For those who think that the "four-step" mandate of limited discussion of bidder deficiencies before contractor selection will always be aborted during the final negotiations with this winning bidder, rather than being deferred, a warning is in order. And that is that the very advocates in industry and Government who caused "four-step" to come about in the first place will be giving maximum attention to this very obvious possibility. That is, Company A is most assuredly not going to let itself be eliminated from the race with Company B for a multi-million dollar prize, under one set of rules, and then stand by while "B" 's proposal is immediately fixed up under another. Indeed, there is every reason to believe that Government evaluators will lean over backwards not to fix up "B" 's proposal during these final negotiations, in order not to put themselves in a position to be criticized on this score while the glare of the spotlight of a formal source selection still exists -- thus leading to even less-than-permissible rectification of the winning proposal. And their tendency to be over-cautious at this stage will be added to by the earlier difficulty the test results show they have in distinguishing at proposal submission stages just what is permissible discussion of these proposals under "four-step" and what is not. The limited-communication mandate of "four-step", that is, is likely to be observed in practice, for several reasons, to a degree greater than required even by policy -- to the detriment of both the field commander with a weapon that doesn't

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do the job, or is late, and the industrialist with the "successful" development contract who receives no follow-on production order, or receives one which lasts for only a few years before militarily obsolescing.

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THE PRIMARY JOB OF DEFENSE ACQUISITION OFFICIALS

It is a basic tenet of a political democracy like ours that everybody will be treated fairly by the Government. Providing for equality-of-opportunity in the provision of the now over \$80 billion a year worth of goods and services the Government purchases each year has, in fact, been a major goal of Government procurement policy and practices since at least the Civil War.

And this has not been simply a matter of political philosophy. The economic success of our capitalistic Society is felt to depend heavily on pitting private organizations against each other in free and open competitions for prizes they value -- whether these be consumer and industrial markets or Government contracts. And while some of the concepts about free private enterprise that abound are a bit simplistic for today's complex society^[4], their stress on the benefits that derive from competition -- competition in all its various forms -- is essentially valid. Harnessing the force of individual people or enterprises acting in their own behalf is a powerful form of governance^[5].

[4] Cf. What is Private Enterprise Today?, MITRE MTP-145, N. Waks, December 1971.

[5] Cf. The Public Use of Private Interest, The Brookings Institution, C. L. Schultze, currently Chairman of the Council of Economic Advisors, 1977.

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Maximizing the equality-of-opportunity criterion in Government procurement to take advantage of these self-interest competitive forces works well in terms of program results and costliness when the Government knows and can describe exactly what it wants, as in the ordinary case of typewriters or articles of clothing for the Armed Forces.

It works less well, but still sufficiently satisfactorily for most purposes (if supplemented by a little common sense about the degree of "negotiation" needed in a particular case) when the Government knows, and can at least set forth in physical or chemical terms, what it is that what it is procuring should do -- sufficiently so that it can objectively measure and then compare the results of what is being offered. A device that can send a radio signal a given distance might be an example here.

However, attempting to maximize the equality-of-opportunity criterion contributes little to making a competition effective in terms of program results:

- (a) when what is needed cannot be adequately described by the Government in terms much more specific than a broad technical translation of a need to solve some military problem;
- (b) when the Government has no way of objectively measuring whether what is being offered will in fact solve this military problem; and

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- (c) when the materiel item being obtained is being acquired for the first time -- indeed when what is being acquired is really not materiel at all, but rather is merely effort directed towards gaining the information needed to help the Government decide whether it can, and should even try, to proceed with a technological approach to solving its military problem;

i. e., in sum, when what is being acquired is a major system development effort. In fact, the equality-of-opportunity criterion becomes distinctly secondary in such cases -- being confined to considerations of preserving the industrial base and helping to assure that individual competitions are real. And yet the purpose of "four-step" is to increase the relative importance of this criterion of a good source selection, and do it at a time when the growing complexity and cost of major defense systems is causing the balance among the criteria in even the current approach to be seriously questioned in this regard.

Simply, an American source selection activity in a major defense program has always been a mixture of efforts directly towards picking a source in the most equitable manner possible at the same time as getting the most promising product the Government can for the time and funds available. But, by the mid-50s, the concept of full and free competition for this class of goods had begun to be seriously questioned. And by the latter half of the 60s, it was openly recognized in the Pentagon that these twin criteria of a good source selection activity were not always compatible -- indeed, that they often conflicted.

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Specifically, the DOD recognized that it had to continue to assure that it always had available an industrial base of suppliers able to undertake such a massive, high-risk enterprise as a major system development, and that the long-range competitive atmosphere it created could affect this base. Further, it realized that it had to assure in each formal competition that a sufficient number of such qualified suppliers became interested enough in the competition to make the competition real, a situation which could be affected by the competitive atmosphere surrounding the particular competition. However, importantly, it also began to realize that it did not need to encourage more than this number or to admit into the arena any but the most qualified bidders. It began to understand, that is, that bid lists for major programs had to, and could, be quite selective^[6].

In addition, and directly to the point here, the relentless increases in the dollar cost and lead-time of these major programs led it to realize that getting the job done at all was increasingly in doubt and that, as a result -- to state it in the extreme -- the equity criterion was becoming a "luxury" in the conduct of the evaluative phases of a source selection also, if it threatened the results that might be expected from the program.

[6] Cf. Selective Competition in New Air Weapon Procurement, unpublished Harvard Business School doctoral thesis, N. Waks, 1961.

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To express simply what was driving such officials, it was realized that a \$900 million program which has a three-year first-line operational life against a particular enemy threat is a \$300 million per year program. But it becomes a \$450 million per year program if only having a two-year life, and, of course, a \$900 million a year program if only first-line for one year. And to the degree that it is less than fully effective when it gets into the hands of troops, even ahead of schedule, program cost-benefit ratios begin to approach infinity. Thus the driving thrust of major source selections increasingly became, and has remained since then, an intimate and wide-ranging iteration between the Government and the Country's most qualified and available suppliers to assure:

- (a) that such suppliers can, in fact, provide what is being described in the bid specifications,
- (b) that what is being specified will in fact do the military job needed,
- (c) that the risks involved in the program are being overtly identified and hedged, and
- (d) that the need which gives rise to a program in the first place will be tracked and up-dated in whatever manner is necessary to assure that suppliers will not be later left in the position of having completed highly successful development efforts on programs that are either not produced or deployed.

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In this last regard, the great importance that defense suppliers currently attach to not being asked to go into full-scale development on programs which are not assured of being produced and deployed if successful in test was amply illustrated at the San Diego Defense Science Board meeting on systems acquisition this past summer. They realize that success in being selected to do such development is a hollow victory if not accompanied by steps that assure the success of the program as well.

Today we have even less choice about the primary job of defense procurement officials. The integratability -- in the physical, functional, and schedule sense -- of any given program with the other programs that are intended to help satisfy a mission need has become a major driver of the interaction activity between the Government and its suppliers' system engineers, as both have come to realize that the principal goal of military acquisition is to help provide greater force capabilities rather than simply to add superior items of materiel to the military inventory.

Too, the relationship between the interacting parties is, of necessity, becoming less and less at arms-length or independent. The job is becoming so difficult that Government engineers in major programs have to be encouraged in all ways possible, much less permitted, to take every opportunity to discuss bidder/contractor approaches and plans for programs, lest these programs wander down the costly path of getting started wrong and staying that way. Recognition of this over-riding consideration caused Pentagon acquisition executives as early as the late '60s to openly seek ways

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in a source selection of separating out what was to be accomplished in a particular program from the decision of who would provide it. This separating of the "what" from the "who" is not an easy task; but, as the new (April 1976) A-109 Government policy document on major system acquisition recognizes, it can be done to a great degree, if started early enough in the system cycle so that a single winner is not being chosen but merely the most qualified contestants for a periodically held elimination contest in which selection will be based on demonstrable results.

The blunt question must thus be asked, under the above circumstances, of what use "four-step" is to Government acquisition officials when it diverts attention and effort from their ever-more primary job, only for reasons of increasing the satisfaction of their secondary one. Indeed, it must pointedly be asked, "Is it really even to the ultimate advantage of the intended beneficiaries -- defense suppliers -- at the price that must be paid for it? ".

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TAKING A DIRECT APPROACH TO THE "ABUSES"

If experienced system source selection people know all this^[7], why then the movement towards trying to increase the equity of major source selections by establishing the "four-step" procedure? Specifically, why did the Pentagon reply with a new procedure to the protests of its major suppliers that source selections were being conducted unfairly as a result of the "buying in", "auctioning", "technical leveling", and "technical transfusions" that were taking place?

The answer is that these complaints were valid, by and large, contributing to the size of cost "over-runs" through establishing initial estimates of program costs that everybody knew were too low right from the beginning and creating a source selection atmosphere that was fraught with the opportunity for bidders to protest officially to the General Accounting Office and to higher level Defense Department officials that the results of various competitions should be over-turned as a result of their mishandling. And protest they did. The number of protests jumped tremendously in the '70s, in fact, as system programs got fewer in number and lasted increasingly longer, making the stakes in obtaining any given one go up precipitously for an individual defense firm. In turn, these mounting protests put the procurement officials who were actually conducting the source selections in a "no-win" position every time they held a competition. They were criticized to higher level officials, that is, no matter how good a job they did in the selection process.

[7] Which may be why only 23% of the Government people interviewed in the test preferred the "four-step" approach for general use.

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Thus the "abuses" problem had to be fixed. But it is the contention of this paper that it did not have to be fixed by adopting "four-step", an approach which, at best, gets at the problem at too great a price, and then only indirectly. The four specific concerns can be handled directly, as the following indicates.

(1) In a sense two of the concerns "auctioning" (through the use of the "best and final offer" technique) and "buying in", are simply opposite faces of the same problem as far as eliminating them as "abuses" are concerned. In the former, the abuse claimed is that the Government is encouraging bidders to bid prices below what they believe warranted, when it requires them, after detailed and repeated discussions of proposal deficiencies and parallel contract negotiations have been conducted, to make a "best and final offer". In the latter ("buying in"), one or more bidders voluntarily bid prices which they know to be below the likely cost of the program to them -- knowing full well that, whether or not the procuring official suspects that this is what is happening, he is then bound to make the award to them if their technical proposals are at least acceptable. This is because of the difficulty of explaining any other action in the face of the long-standing Government tradition, bordering on a mandate, of making awards to the lowest-priced responsible and responsive bidders whenever possible.

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But these two "abuses" do not call for "four-step". They both come from an increasing failure of Government procurement officials since the '50s to recognize the management implications of the varying relationships the Government as a buyer can establish with its suppliers in satisfying some need. In particular here, they follow from its increasing failure to recognize, in all but form, that in the type of relationship which ordinarily must be established in the class of procurements to which "four-step" is being applied -- a cost-type relationship^[8] -- the notion of "price" does not exist at all, much less the concept of lowest price. In this relationship, that is, a contractor is not an arms-length supplier offering to do a specific job by a given date for a specific price. Rather, he is legally an agent of the Government offering his best efforts for a fee -- not a profit -- to work towards some goal, changeable at Government will, which he estimates broadly will cost the Government some amount of dollars to achieve using the approach he intends to take. But he is responsible neither for achieving this goal nor for his cost estimates. "Price" thus does not enter the picture at all.

Under the circumstances, for the Government to take the degree to which one bidder provides a lower estimate of cost than another seriously enough to base an award on it is an absurdity. The estimate may bear little or no relationship to what the Government's ultimate cost for the program will actually be -- whether because the program changes a good deal as it unfolds and the knowledge is

[8] This results from a recognition of the uncertainties in the statement of need, as well as in performance and cost estimates, that ordinarily exist in such a highly complex and long-range activity as a major system program.

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gained which is the very purpose of the development effort, or because the program's high uncertainty prevents a valid cost estimate to be made of even a fixed program specification. This is why "cost realism", not estimated costs, has been the official criterion since the '50s of judging the dollars involved in such programs -- in an attempt to penalize bidders, not reward them, for deliberately bidding too low.

These two "abuses" thus lead themselves to direct attack -- through policy/regulations backed up by rewards and penalties, education, and research into why the system has drifted away from what it knew well in the Korean War days. An attitude on the part of Government procurement officials, at all levels, of questioning why an estimated figure is so much lower than other bidder estimates and independent Government estimates, and negotiations that throw the burden-of-proof on the bidder to justify a low estimate (it can't be overlooked that he may in fact have come up with a better way) should decidedly help in preventing a "buy-in". And the same attitude of looking every time for specifically supported cost realism with regard to revision of original estimates, after the necessary detailed discussion of original proposals has taken place, should go a long way towards preventing bidders from feeling that they are in an auction. Finally, the cultural heritage that has caused the blind worship of the "low bid" for so long -- particularly in the Congress and in its investigating arm, the GAO -- predictably will be tempered to a degree as the legislative branch sees the continuance of the cost "over-run" problem for so long and begins to seriously investigate why it is happening. They will quickly discover (many are already well aware) that a significant portion of it is caused by the under-estimated figures they get for major programs, whose acceptance by DOD they decidedly contribute to by their carry-over to such programs of the cultural norms of other Gov-

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ernment procurement. The Congress has in fact already taken a step in the right direction, through its proposed Federal Acquisition Act. This Act recognizes that "price" may well not be a "primary or significant factor" in an acquisition calling for competitive negotiations.

(2) "Technical leveling" is an abuse which it is claimed Government proposal evaluators indulge in by discussing all the technical proposals with the various competitors, before one of them is selected, in such a way that they all end up with essentially the same technical proposal or proposals of relatively equal technical merit; and the source selection can then be made on the basis of the most objectively measureable and hence most readily defensible basis: lowest price^[9]. This is not a defensible practice even in the case of a fixed-price type contract relationship, i. e., even when the notion of "price" is valid. But the solution to it is not, again, to reduce the opportunity for it to happen by eliminating areas, and reducing the numbers, of discussions of technical proposals that take place, as "four-step" does. Rather, it is to face up directly to the fact that a broad menu of possible approaches among which the

[9] In defense of the motivation of Government evaluators here, it might be observed that what these evaluators seem to be trying to do in a complex source selection, consciously or unconsciously, is to help make all the technical proposals with any merit more "acceptable" -- in what appears to be in the Government's best interest. However, the result of their efforts is decidedly to narrow the differences among the bidders' proposals, to the degree at times that a conclusion is reached that there is no technical basis for selecting one bidder over another. Some other basis must be used, viz., price.

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Government can choose is in the Government's best interest, in contrast to "leveling" or narrowing the Government's choices for whatever reason. This recognition is, in fact, a major tenet of the new A-109 systems acquisition policy now being instituted in the Department of Defense (in fact, throughout the Government). Encouraging it and facing up to the need for getting into a position to do the admittedly difficult job of comparatively evaluating what may be quite diverse technical proposals under it, in a fashion that will stand up to third-party scrutiny, will have to be accomplished directly by DOD in any case. There is therefore no need, much less desirability, for additional DOD procurement policy to deal with the problem, especially when such additional policy deals with the problem in a restrictive rather than a positive way.

(3) Finally, there is the claimed abuse known as "technical transfusion". This is the deliberate taking of the better parts of losing proposals and making them a part -- or "transfusing" them -- with what the winner is offering. This is considered a form of stealing by the losers, whose ideas may even involve proprietary material. As a minimum, it certainly doesn't encourage bidders to come forth with their best ideas in a source selection procedure until they absolutely have to.

But the answer to the problem isn't something like "four-step", which reduces the possible number of rounds and eliminates parallel negotiation in a source selection and hence theoretically provides little opportunity for transfusion or holding back. On the contrary, "technical transfusion" should be encouraged. As indicated above, getting the best possible response to the Government's need is the primary responsibility of the Government people involved. But this encouragement

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needs to be accompanied by a method for rewarding losers for those of their ideas that are used, i.e., a means of providing a positive incentive for creativity and innovation by directly paying for it, and paying for it on the basis of its value, not simply its cost.

This is admittedly not easy to do. But one way of doing it already exists and is practiced at times. And so it can be done. And that is to reward a loser's good idea, when it is a separable piece like a subsystem or an item of equipment, to the same degree the winner's ideas are by directing a subcontract to the loser for the piece throughout the program.

Where it is not a separable piece, a greater challenge seems to be present. However, even here there would not appear to be any reason why something like a royalty over-ride for desired technical services by the loser could not be provided for in the winning contract, in an amount negotiated by the Government with the loser sufficiently above the out-of-pocket costs of providing the technical services to reflect the value of the idea being used. An arrangement similar to this was, in fact, consummated by the Navy with a number of suppliers during the Korean War when multiple sources were needed in a hurry on various items.

In sum, if increased equity is the goal of "four-step", why not provide for it directly in a way that is fundamental to our Society: through respect for property rights, whether these rights are tangible or not?

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CONCLUDING COMMENT

To the degree that the new Government-wide process for acquiring major systems that is mandated by OMB Circular A-109 of April 1976 is implemented by parallel developments and other "hardware" type continuous competitions of results, rather than by ad hoc, winner-take-all "paper" competitions of promises, some of the above concerns disappear to a degree. Losers will be paid something for their ideas, albeit not necessarily their true value; selections will be based more on things that can be measured, thus both reducing the importance of exploratory discussions in source selections and the opportunity for technical leveling; and, finally, costs will be able to be estimated much more realistically by all parties, reducing the likelihood of both "auctioning" and "buying in". However, to the very degree that A-109 reduces these concerns with "four-step", it raises the direct question of why "four-step" is needed at all in the new milieu. At the very least, does it not suggest that "four-step" ought to be confined to only those competitions in which a single source is to be selected as a result of paper proposals, and where program results are sufficiently certain that the contracting relationship can be of the fixed-price type? And even in these cases, the difficulty "four-step" gives bidders in trying to satisfy, through tradeoff analyses, other current acquisition policy objectives of DOD such as design-to-cost and cost estimating on a life-cycle cost basis^[10] makes it of questionable value. Should it thus be considered at all at this time?

[10] See DOD Directive 4105.62 of January 6, 1976, "Selection of Contractual Sources for Major Defense Systems," for various new acquisition policy objectives.

APPENDIX

Pentagon Plans New Contracting Process To Cut Cost Overruns, Push Innovation

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WASHINGTON — The Defense Department, hoping to encourage technical innovation and to discourage cost overruns, plans to change the way it selects contractors for major weapons.

The program will replace current contracting procedures that Pentagon officials believe frequently induce companies to submit unrealistically low bids when competing for contracts to develop and build multibillion-dollar weapons systems.

After "buying in" at too low a price, contractors often find they have to boost their prices. These cost overruns create managerial and political problems for both the company and the military.

The new procedure, called four-step selection, "is designed to reveal the true program cost from the beginning," says Dale Babione, the Pentagon's director of systems acquisition. This won't reduce the cost of weapons, in fact at the outset the price may seem higher, but it should lower the chances of cost overruns and managerial confusion, officials say.

More Thoughtful and Imaginative

Following a two-year test involving 66 bids on 17 projects, Pentagon officials found that under the four-step process companies often produce technical proposals that are more thoughtful and imaginative than under the current system.

Corporations generally support the new procedure, which the Pentagon plans to adopt in several months for most contracts to design, develop and build major weapons.

Currently, when companies bid on a project, such as a helicopter, they submit complete proposals including design plans and a price. After evaluating the proposals, the service ordering the weapon begins a round of separate negotiations with all the bidders during which it discusses the technical deficiencies of each proposal.

Then companies are permitted to submit a "best and final offer." Sometimes there are several rounds of those offers before the service selects a winner. If a weapons program is just beginning, the service may pick two or more companies to design and build prototypes. Later it will award one company

a production contract that may run for a decade or more and cost billions of dollars.

The current system "seems to encourage accepting the lowest price," rather than the best technical proposal, according to Dale Church, deputy under Secretary of Defense for acquisition policy. In addition, he says the present procedure, which has been used for about 20 years, leads to other abuses.

One abuse, called "technical leveling" tends to obscure design differences between proposals and sometimes encourages companies to cut corners on their initial technical proposals. This is because the discussion of design deficiencies gives companies a chance to learn if competitors have come up with better ideas and then to incorporate them in their own final proposals. "It gives an unfair advantage to the fellow who comes in with an inferior proposal," Mr. Babione says.

Another abuse is called "auctioneering" which occurs when services require a series of "best and final offers," each allowing—or forcing, some contractors say—bidders to keep lowering their prices.

"As a result, we often get a price that was sadly unrealistic," Mr. Church says. "Using the auctioneering technique almost always buys you problems. There's a tremendous amount of inefficiency created in trying to meet unrealistic cost goals."

The Four Steps

In contrast, the four-step process is designed to minimize such horsetrading. The steps are:

—First, submission of technical proposals without detailed cost data. The service will ask questions to clarify the proposals, but, to prevent technical leveling, major design or management deficiencies won't be discussed with bidders. "This will encourage all contractors to go out and really compete hard to come up with the best technical proposal the first time around," Mr. Church says.

—Second, submission of cost proposals. These will be discussed and evaluated to determine if the costs are realistic. By requiring companies to submit separate design and cost proposals, officials hope the bidders will put more thought into each one.

—Third, setting a common cut-off date for final proposals, with a strict prohibition against asking for new "final" offers unless the service makes major changes in its specifications. The service will then select the best proposal.

—Fourth, negotiating a contract with the winner. For programs involving competitive design or prototype development, contracts will be awarded to more than one company.

"There simply aren't any panaceas in this business," Mr. Church cautions. "Mistakes happen." But he thinks the new procedure promises to reduce risks for both contractors and the government.